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MOTOROLA

September 25, 2002

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Mr. Thomas Sugrue
Chief, Wireless Telecommunications Bureau
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, DC 20554

**RE: Additional Information Requested Concerning Motorola's Modified Call Processing Plan**

Dear Mr. Sugrue:

Motorola, Inc. ("Motorola") hereby submits additional information at the request of the Wireless Telecommunications Bureau ("Wireless Bureau" or "Bureau") staff concerning Motorola's request for expedited approval of a new enhanced 911 ("E-911") call processing plan. Motorola has implemented this call processing plan in its T720 and 120E handsets and on September 20, 2002, requested expedited Bureau approval of this methodology, consistent with the requirements of Section 22.921 of the Commission's rules.[1] Motorola believes this information is responsive to the inquiries of the Bureau staff and remains available to answer any additional questions.

***Question 1.*** The Bureau staff asked that Motorola provide a detailed description of the call processing system employed in the T720 and 120E handsets, as well as a flow chart that accurately depicted the complete E-911 process for these handsets. In Exhibit A, Motorola has attached such a description and flow chart.

***Question 2.*** The Bureau staff requested clarification that the modified call processing plan would reinitiate the Automatic A/B Roaming protocol, if a new 911 call was made during the 5 minute time period after a call was ended or interrupted. Motorola again states, and makes

[1] *See* 47 C.F.R. § 22.921.

clear in the attached Exhibit **A,** that *anytime* a new 911 call is placed the full 911 call processing occurs, attempting to ensure that a caller completes the call. **The** only modification to the previously approved procedure is that automatic redialing of 911 does not occur following an anomalous call interruption.

***Question 3.*** The Bureau staff inquired **as** to the operations of call back from a **PSAP** through the network to a Motorola handset. **While** Motorola provides some network switching gear to **Verizon** Wireless, Motorola is not in a position to opine on the full system operations of the Verizon Wireless network. The full operation would include Lucent and Nortel switching equipment, presumably position determining equipment provided by SnapTrack/Qualcomm or other third,parties, leased lines from the LEC, and different infrastructure resident at each particular public safety answering point ("PSAP").

With **the** attached exhibit and clarifications included herein, Motorola **trusts** that it has responded to the questions of the Bureau staff. Please contact the undersigned should you have any additional questions.

Sincerely,

Mary E Brooner

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# Exhibit A

## Motorola Compliance with the FCC Second Report and Order to Ensure Compatibility with Enhanced 911 Emergency Calling Systems

The FCC's Second Report and Order "In the Matter of Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems", adopted May 13,1999 and released June 9,1999, describes the necessary E911 compliance for analog cellular telephones The Motorola Tri-mode phones, the V120c, the V60c, and the V270c, all comply with the requirements outlined in the Second Report and Order (R&O) and have been further enhanced to meet the spirit and intent of the R&O. Additionally, Motorola has employed a modified call processing scheme for its new handsets, the T720 and 120E, that are deployed on the Verizon Wireless network. A description of the differences in call processing is provided herein. Motorola has requested approval for use of this modified call processing system.

The R&O only applies to analog cellular telephones. Since the Motorola phones are Tri-mode including analog capabilities, this R&O does apply and Has been met. The R&O requires only that the cellular phone comply while operating in analog mode. Motorola has further enhanced the phone to support the spirit of the R&O while operating in CDMA 800 MHz and PCS 1900 MHz modes as well.

The R&O identifies three possible alternatives to meeting the requirements, Automatic A/B Roaming-Intelligent Retry (IR), Adequate/Strongest Signal, and Selective Retry. Motorola has chosen to use the Automatic A/B Roaming-Intelligent Retry method.

Specifically, the following are the key points of the R&O along with how the Motorola phone meets the requirement under the Automatic A/B Roaming-Intelligent Retry (IR) method, with the exception of the T720 and 120E handsets deployed on the Verizon Wireless network. The Verizon versions of the T720 and 120E handsets use a varying procedure, that is detailed below.

- Paragraph28

  *"First,* the most basic goal is to improve the 911 call completion rate so far as practicable, including in circumstances where the caller's preferred carrier is unable to complete a call that can be completed by another carrier."

  The Motorola phones address this intent through the use of the IR method of attempting and completing Emergency Calls. Additional details are outlined below.

  "*Second*, as the advocates of the various proposals recognize, it is often desirable to complete 911 calls, where possible, via the preferred cellular carrier."

The Motorola phones initially use the PRL that is defined by the carrier operator to search for a usable system. By using the PRL, the phone will attempt to locate and access a preferred system. More details are listed in the sections below.

- Paragraph29

"*Fourth*, the 911 call processing mode should address the lock-in problem in a reasonable and effective way that substantially reduces or eliminates the likelihood that a 911 call might be locked in on the system of a cellular carrier that is unable to provide a usable voice communication channel."

The Motorola phones prevent "lock-in" by limiting access attempts on a particular channel to two attempts and by detecting subsequent successful accesses that fail shortly after the access, i.e. an immediate dropped call, and deciding to continue to scan for another available channel

- Paragraph33

"...the handset would override any features which prevent scanning of either the A side or B side and default to A/B, B/A, depending on the handset's preferred carrier setting"

For all Emergency Calls, the Motorola phones will temporarily override any user defined settings for the "System Mode", aka "Scanning Mode", and for the "Service Preferred Mode." While the Verizon Wireless phones use only the System Modes of Home Only, Automatic A, and Automatic B under normal operation, the Motorola phones will change the System Mode to Standard for purposes of an Emergency Call Under the Standard System Mode, the phones will scan and acquire any channel defined in the PCS band, as a Primary or Secondary CDMA 800 MHz channel as defined in the NAM, or any 800 MHz analog A or B hand control channel as defined by the NAM. Also, if the user has changed the phone to prefer only CDMA, the phone will ovemde the Preferred Mode and allow the phone to search for analog service.

"Initially, the handset would seek to complete the call with the preferred carrier"

The Motorola phones will initially use the carrier operator's defined PRL to attempt to acquire a system and complete the call. By using the PRL, the phone will attempt to place the call on a preferred carrier.

"If the handset detected no decodable forward control channel signal from the preferred carrier, the handset would retry the call with the non-preferred carrier, as in the A/B, B/A mode."

The Motorola phones will continue to scan all available PCS 1900 MHz, CDMA 800 MHz, and analog channels in an attempt to find a channel in which the forward control channel signal is decodable and attempt to complete the Emergency Call.

"The number of attempted retries with the <any> carrier would be limited to no more than three, and the length of time for each attempt would be limited to three seconds."

The Motorola phones will scan both analog bands and will attempt to complete the Emergency Call a maximum of twice per analog channel. Each scan and access of an analog control channel takes between 2 and 3 seconds.

"If this initial call attempt via the preferred carrier should fail, the handset would attempt to complete the call via the non-preferred carrier."

The Motorola phones will attempt to complete the Emergency Call twice on the preferred carrier. If a failure occurs, the phone will move to the next channel defined in the scan list in an attempt to find service. The phone will continue to scan through the defined channels until service is found. Regardless of the preference of the carrier, the Emergency Call will be attempted on any channel where service is found.

"If both call attempts should fail, the handset would continue to rescan and reattempt placing the call with both the preferred and the non-preferred carrier, using the same algorithms, until the call is completed, the user terminates the call, or the handset loses power."

This statement clearly indicates that the scope of the R&O covers only analog service as only two carriers exist in analog. In the Motorola phones, this requirement has been enhanced to identify any and all carriers that can provide service in the PCS 1900 MHz, CDMA 800 MHz, or analog bands. The phone will continue to scan all defined channels and attempt to complete the call on any available channel. The E911 algorithm will ignore all limitations placed on the system selection algorithms by any carrier operator features or by the user selectable features. The phone will continue in this manner until the call is completed, the user ends the Emergency Call attempt, or the phone loses power as required by the R&O.

"If a voice channel is established but the 911 call terminates for some reason other than the user ending the call or the base station releasing the call ... the handset would automatically reattempt the call using the same algorithm."

V120c, the V60c, and the V270c Motorola Phones

If an Emergency Call ends abnormally as in a dropped call, these Motorola phones will reattempt the call. If the call cannot be completed on the same system that the call was dropped on, the phone will begin scanning for a usable system again as outlined above.

T720 and 120E Motorola Phones with Verizon Service

If an Emergency Call ends abnormally as in a dropped call, then a Verizon activated mobile will not automatically reattempt the call, but will attempt to reacquire the paging channel matching the same system (preferred or non-preferred) that the phone was on when the call was dropped in order to keep the phone in Emergency Call state. This enables the PSAP to be able to call back the caller quickly and permits the flow of location information to the PSAP, even if a voice communication channel cannot be established. Additionally, this will mitigate the number of unintentional calls to 911, should the initial call to 911 have been unintentional.

"... the user should also receive feedback from the handset to indicate that this call set-up process is underway."

The Motorola phones display "Calling.. . . Emergency" when originating the Emergency Call and will play a tone periodically during the origination and possible. scanning.

- Paragraph39

"... the handset must provide effective feedback to inform the user when 911 call processing is underway and has not finished. This could take the form of an audible tone or message in addition to a visual status report on the handset's screen."

The Motorola phones display "Calling.. .. Emergency" when originating the Emergency Call and will play a tone periodically during the origination and possible scanning.

- Paragraph40

"... the JR algorithm should be such that, in any case, the handset would not spend more than a reasonable amount of time seeking to complete the call with the preferred carrier before reattempting the call with the other cellular carrier."

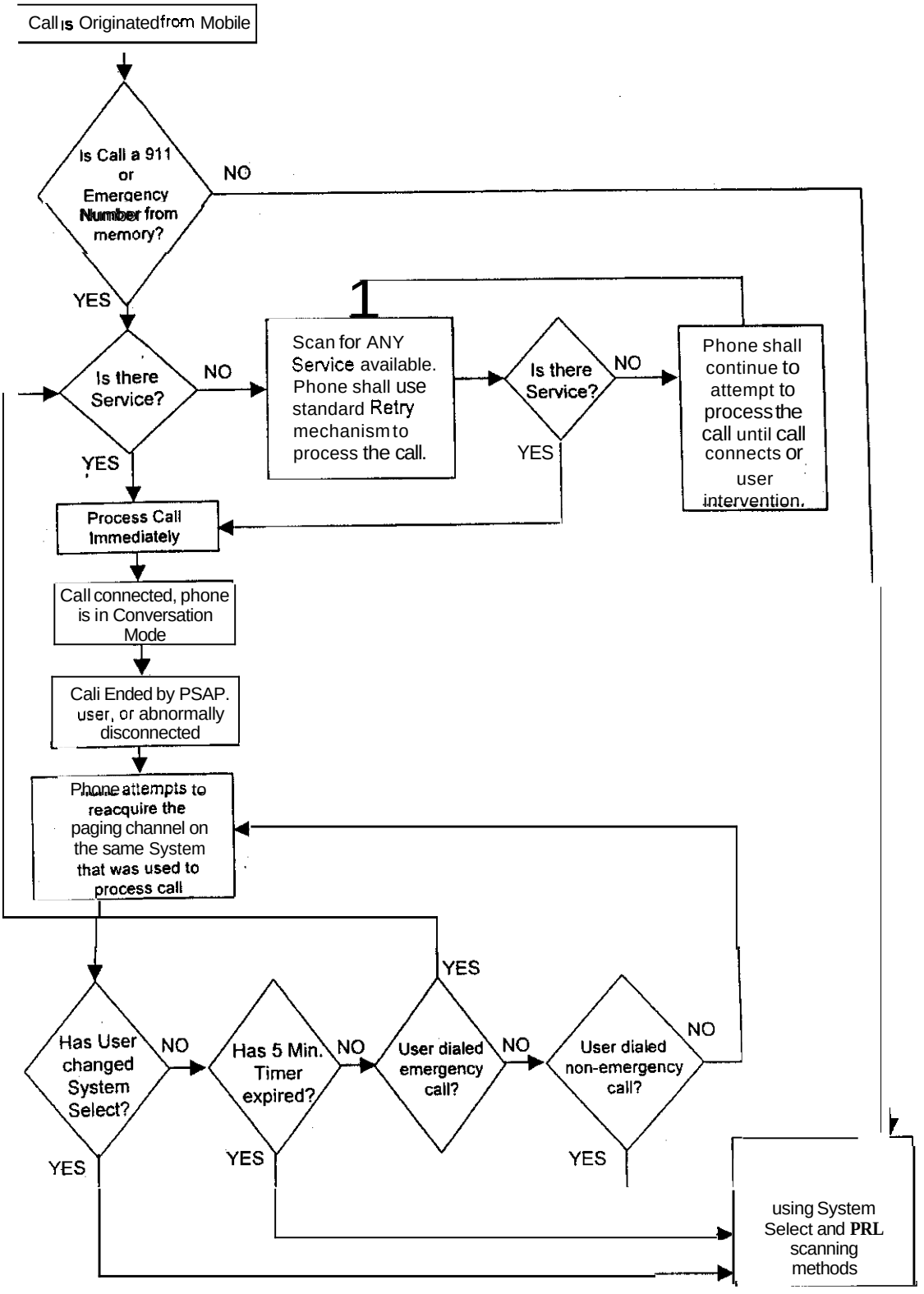
Again, this statement clearly suggests analog operation of the phone in reference to "...the other cellular carrier." The Motorola phones will retry on any and all defined channels representing multiple carriers and will attempt a call on an available channel twice before continuing to scan for other service. The time to scan digital channels is a couple of seconds, so the bulk of the time on any one channel is determined by the two attempts to access.

- Paragraph41

"Taking into account the fact that the user will be receiving feedback information from the handset, we find that 17 seconds from the time the call is sent would be a reasonable and achievable maximum time period."

This paragraph indicates that the "reasonable amount of time" suggested in Paragraph 40 be a maximum of 17 seconds. Since the most likely system to complete Emergency Calls anywhere is on the analog 800 MHz systems, the Motorola phones **will** attempt **to** complete the call on the analog systems once every 17 seconds.

# E911 Process for T720/120E On Verizon Wireless Network Flow Chart

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